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SUBJECT: Brazil's Broad Band Initiatives

SENSITIVE BUT UNCLASSIFIED

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¶1. (SBU) Summary: Internet broadband use in Brazil has soared dramatically over the past year, reflecting an increased interest in navigating sites that require greater connectivity speed such as socialization sites (facebook, myspace etc.), entertainment sites for streaming videos and music, business application websites, surveillance functions, and voice over internet protocol (VOIP) use. Brazil's Ministry of Communications (MOC) estimates that broadband use in Brazil for February 2009 increased by almost 25% over February 2008 to over 21 million users, presenting the MOC with unique challenges in dealing with what is expected to be even greater growth rates in the future. Officials from the Ministry of Development, Industry, and Commerce (MDIC), MOC, and Brazil's telecommunications regulator (ANATEL) discussed various public/private partnership approaches with Mission, aimed at addressing this demand. Options range from an expansion of current fiber optic networks and enhanced mobile technology, to powerline communications systems (PLC) that transmit internet broadband service and digital cable TV through existing electric powerline infrastructure. Broadband over powerline technology (BPL) may represent the most promising option in addressing future demand and fulfilling MOC's goal of universal access to the internet. End Summary.

#### BRAZIL'S BROAD BAND USE GROWING

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¶2. (SBU) Henrique Badaro, MOC's director of international affairs told Econoff that almost 64 million Brazilians have internet access, either at home, at work, or at public facilities such as libraries; yet only 38% or 24.8 million are active users. Of the active users, 21.5 million or 87% utilized broad band services, an important factor that the MOC will consider when implementing its universal access plan that prioritizes internet access for all Brazilians, especially those in rural, underdeveloped areas. Badaro commented that increased demand for broadband services was a direct result of users wanting greater access speeds to preferred internet sites and for use of VOIP services. In highlighting the infrastructure challenge of installing fixed lines in remote areas of Brazil, Bandaro stressed the importance of GoB's continued development and regulation of PLC and wireless technologies, and of focusing the plan's expansion in this direction.

#### MOC BROAD BAND INITIATIVES

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13. (SBU) As part of MOC's universal access plan, Badaro highlighted the expansion of GoB-financed information technology centers (ITC) throughout Brazil. MOC installed 6,000 ITCs in 2008, and plans to open an additional 6,000 ITCs in 2009 and 3,000 in 2010. Each ITC has 10 desktop computers with broadband access, headphones and microphones for VOIP use, a central printer and fax, and a systems manager. The plan targets rural areas with no internet or computer access and, due to the difficulties of installing fixed lines into remotes areas of Brazil, relies on wireless broadband technologies. By offering a high speed, efficient internet access option, Badaro reasoned that public-use ITCs could cater to a greater part of the population by reducing their navigation times and freeing up existing resources for use by more members of the community. In highlighting another important initiative, Badaro commented that Brazil's census results from 2010 are expected to confirm that only 70,000 of the 150,000 schools in Brazil have broadband access available for their students, something that the MOC will be working with State governors to address through public/private partnerships that expand existing fiber optic infrastructure and examine wireless connectivity options.

#### ACRE STATEWIDE BROADBAND PROJECT

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14. (SBU) Trade analyst Jose Vieira from the Secretariat of Production Development within MDIC described the Acre statewide broadband project initiative as a perfect example of a private/public partnership in the IT field. The State of Acre is located in the northwest Amazon region of Brazil and it is estimated that less than ten percent of the homes located there have a computer with access to the internet. Vieira told Econoff that Acre state officials are committed to the development of a statewide

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broadband project that links its capital city Rio Branco with its second largest city, Cruzeiro do Sul, via high-speed internet to eliminate redundancies and reduce overall operating costs in government communications. Vieira mentioned that the state also wants to place broadband public internet access points in schools and health posts and to provide connections to the general public as a public service. A fourth objective of the project is to provide commercial high-speed internet access for businesses and homes seeking higher bandwidth. The State of Acre, working through MDIC, was awarded a USTDA US\$573K grant to fund a feasibility study of the project and develop its organizational structure, functional specifications, and infrastructure. The study will also include a review of legal and regulatory issues related to public-private partnerships and assess the project's environmental impact.

#### INTERNET MOBILITY GROWTH

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15. (SBU) With the introduction of 3G wireless internet connectivity in Brazil in 2008, Brazilian mobile telephone operators are scrambling to position themselves to cater to an expected steep increase in demand. In a recent article in Brazil's leading economic newspaper Valor, Joao Cox, president of mobile operator Claro, stated that the introduction of 3G connectivity will have the same effect on wireless broadband demand as the introduction of pre-paid cellular phone cards in 1998 had on cellular phone demand, where the industry experienced unprecedented growth rates. MOC's Badaro confirmed that Claro is currently negotiating with several Brazilian state governors to obtain a value added tax (ICMS) exemption on personal broadband accounts and on the purchase of broadband modems. Currently, user accounts under R\$30 are exempt from the ICMS and modem purchases are not exempt from the ICMS.

#### BROADBAND OVER POWERLINE TECHNOLOGY (BPL)/POWERLINE COMMUNICATIONS SYSTEMS (PLC)

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16. (SBU) Perhaps the most promising initiative in Brazil aimed at providing universal broadband service to its citizens is BPL technology that delivers high-speed internet service through PLC systems. PLC provides high-speed data transmission over medium and

low voltage electric lines to end users' homes and businesses by transmitting data within specifically established power line frequencies without interfering with normal electric transmissions. A specialized modem is then plugged into an electrical outlet and an Ethernet cable links the modem to the user's computer for broadband internet access, or to a TV for digital cable access. Wireless modem versions are also available for broadband use. Given that Brazil's electronic transmission system integrates 98% of the country into one electronic grid and that the remaining two percent are expected to be integrated into the grid within the next year and a half, Jeferson Nacif, Director of International Affairs at Brazil's telecommunications regulation agency (ANATEL), in a recent meeting with Econoff, commented that BPL represents possibly the best option to service remote areas of Brazil without incurring significant infrastructure costs associated with laying cable. Nacif expects broadband delivery speeds of 200 megabits through BPL technology. Nacif stated that Japanese electronics company Panasonic partnered with Brazil's Telecommunications Systems and Infrastructure Business Association (APTEL) in Barreirinhas, a remote city located in northern Brazil, in late 2008 to test BPL's data transmission technology by providing digital TV services to 50 of the city's users. ANATEL provided technical oversight during the test and concluded that the trial was successful and that ANATEL's initial concerns of data transmission interference with electromagnetic transmissions operating in the same frequency range were addressed through the installation of frequency mitigation equipment that diminished BPL's interference capacities.

#### BPL REGULATION DETAILS

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17. (SBU) ANATEL published resolution 527 on April 8, 2009 outlining the technical criteria by which data transmission will be delivered through Brazil's electricity grid. The resolution authorizes PLC within radio frequencies 1.705MHz to 50MHz and requires that the service providers register their company, equipment details, operational frequency, and start-up date with ANATEL at least 30 days prior to initiating service. This database should be amendable and available to ANATEL for periodic reviews. Nacif explained that ANATEL will be able to issue PLC licenses under resolution 527 once

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ANEEL, Brazil's National Electricity Agency, publishes its own regulation governing data transmissions over their powerlines. Andre Nobrega, ANEEL's Advisor to the Board of Directors, advised that ANEEL completed their public comment period on May 11 and held a public audience on May 13, per regulatory transparency requirements, to discuss the findings and incorporate them into the resolution's final draft. Nobrega estimated that ANEEL would publish a final resolution by the end of June and does not expect any delays or significant alterations to the original draft based on the public comments received and the technical nature of the subject.

#### U.S. BASED BPL ONE OF THE FIRST ON LINE

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18. (SBU) BPL Global, a Pittsburgh-based smart grid technology company announced in September 2008 that the company had signed a contract with Brazilian energy company COPEL Telecommunications to implement phase one of a pilot program using BPL technology in Santo Antonio da Platina, located in the southern Brazilian state of Parana. Badaro hailed this development as an important step in realizing MOC's universal access goal. Phase one of the pilot project, whose 6 month trial period began in March 2009, provides broadband services to 300 of COPEL's end users and includes deployment, full testing, and operation of BPL equipment and PLC systems. The project also plans to offer its customers access to VoIP, video surveillance, and smart grid management capabilities that consolidate multiple domestic or commercial functions under a single network. Badaro believes that COPEL plans to serve their entire customer base through a multi-phase approach. Once the first phase is completed, a second, citywide deployment is expected that would service 3,000 to 10,000 COPEL customers. COPEL then would

decide on a large scale deployment that would provide full coverage to the company's 3.5 million customers.

19. (SBU) Comment: As the demand for connectivity in the Brazilian IT market increases and new technologies are introduced, infrastructural challenges associated with expanding Brazil's fiber optic infrastructure and pressures on its regulatory oversight to embrace new technologies aimed at accelerating universal access, also increase. The goal of connecting the rural areas of Brazil and incorporating them into mainstream Brazilian society is an important GoB objective. Although recent introductions of the iPhone and 3G wireless connectivity are transforming Brazilian society, these innovations have yet to reach all segments of Brazil's society. Broadband access and digital TV transmission through PLC, however, do present real opportunities to connect rural areas of Brazilian society without prohibitive infrastructure costs and significant implementation delays, offering consumers an affordable and realistic option. End comment.

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